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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/594,324	06/15/2000	Toshio Matsumura		8859

7590 06/29/2004  
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EXAMINER

CINTINS, IVARS C

ART UNIT PAPER NUMBER

1724

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/594,324

Applicant(s)

MATSUMURA ET AL.

Examiner

Ivars C. Cintins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 3-11 and 14-31 is/are pending in the application.
- 4a) Of the above claim(s) 25-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-11 and 14-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 21, 22 and 24 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (U.S. Patent No. 5,882,517) in view of VanderBilt et al. (U.S. Patent No. 4,753,728). As pointed out in the previous Office action, Chen et al. discloses a porous structure (filter) for separating unwanted constituents from a fluid (see col. 1, lines 4-9), which structure comprises activated carbon (col. 9, lines 48-49; and col. 16, line 31) in combination with a polymeric binder of the type recited (col. 6, lines 21-23; and col. 18, line 3). Accordingly, this reference discloses the claimed invention with the exception of the recited inlet and outlet for the filter, the exact melt index of the binder, and the exact density of this porous structure. However, since the porous structure of the reference is intended to be used as a filtration material, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide this reference material with a housing having an inlet and an outlet, in order to facilitate contact between this filtration material and the fluid undergoing treatment. Also, VanderBilt et al. discloses that carbon block filters formed with very low melt index polymer binders (see col. 3, lines 30-37) will permit high flow rates, such as .8 and 1.0 gallons per minute (3.6 and 4.5 L/min, respectively). See TABLE II, examples 21 and 22. Since Chen et al. clearly discloses a melt index range which encompasses all of Applicant's recited values (col. 6, lines 19-23), it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ polymer binders with a melt index at the lower end of

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this disclosed range (i.e. between 1.1 and 2.3 g/10 min) to form the reference filter, if one wanted to maximize the flow rate through this filter. Furthermore, it would have been obvious of one of ordinary skill in the fluid purification art to employ a filter having the recited density in the system of the modified primary reference, since such a density would correspond to a porous structure called for by this modified primary reference. Moreover, it would have been obvious to this skilled artisan to employ carbon particles passing through a mesh of 100, since Chen et al. clearly teaches (see col. 5, line 8) that the carbon particles can be between 10 and 400 microns in size, which disclosed range includes 100 mesh (i.e. 149 microns). Applicant should note that since claim 1 recites "first" particulate active carbon which can be of a size which passes through a mesh of 100 (i.e. 60-100) and "second" particulate active carbon of a size which passes through a mesh of 100 (see claim 1, lines 10-12), this claim does not appear to require particles having different particle sizes.

Should it be held that the recitation in lines 10-12 of claim 1 requires a mixture of diverse activated carbon particles, then claims 1, 5, 21, 22 and 24 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. and VanderBilt et al. as applied above, further in view of Shmidt et al. (U.S. Patent No. 5,904,854). As pointed out in the previous Office action, Shmidt et al. discloses an adsorbent material comprising activated carbon having different particle sizes; and further teaches (see col. 1, line 66 through col. 2, line 1) that such a composite material has low flow resistance and improved adsorption properties. Since these characteristics would obviously be desirable in the filter of the modified primary reference, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the activated carbon mixture of Shmidt et al. in the filter of the modified primary reference, in order

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to obtain the advantages disclosed by Shmidt et al. for the device of this modified primary reference.

Claims 1, 3-11 and 14-24 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Unexamined Patent Application Publication No. 10-85729 in view of Chen et al., further in view of VanderBilt et al. As pointed out in the previous Office action, the primary reference discloses a filter cartridge comprising a chamber filled with activated carbon, and a hollow yarn membrane chamber. Accordingly, this primary reference discloses the claimed invention with the exception of the recited polymeric binder. Chen et al., as modified by VanderBilt et al. above, discloses a porous filter element of the type recited; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the filter element of the secondary references for the activated carbon of the primary reference, in order to obtain the advantages disclosed by these secondary reference for the system of the primary reference. As explained above, the recitation in lines 10-12 of claim 1 does not preclude the use of a single carbon particulate material having a mesh size of 100.

Again, should it be held that the recitation in lines 10-12 of claim 1 requires a mixture of diverse activated carbon particles, then claims 1, 3-11 and 14-24 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Unexamined Patent Application Publication No. 10-85729 in view of Chen et al. and VanderBilt et al. as applied above, further in view of Shmidt et al. As pointed out in the previous Office action, Shmidt et al. discloses an adsorbent material comprising activated carbon having different particle sizes; and further teaches (see col. 1, line 66 through col. 2, line 1) that such a composite material has low flow resistance and improved adsorption properties. Since these characteristics would obviously be desirable in the

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filter of the modified primary reference, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the activated carbon mixture of Shmidt et al. in the filter of the modified primary reference, in order to obtain the advantages disclosed by Shmidt et al. for the device of this modified primary reference.

Applicant's response filed April 15, 2004 has been noted and carefully considered but is not deemed to be persuasive of patentability. Applicant apparently concedes the propriety of the various reference combinations contained in the previous Office action, and repeated above, since no arguments to the contrary have been presented. Instead, it appears that Applicant is relying solely on new and unexpected results in order to overcome the rejections based on these reference combinations, since the above noted response merely presents a multitude of comparative examples. Applicant should note, however, that the comparative test data presented in this response cannot be given weight in determining patentability of the pending claims, because this data has not been presented in proper affidavit or declaration form. Upon the filing of an appropriate affidavit or declaration under 37 C.F.R. § 1.132, this data will be evaluated.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,


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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (571) 272-1155. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Duane Smith, can be reached at (571) 272-1166.

The centralized facsimile number for the USPTO is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Ivars C. Cintins**  
**Primary Examiner**  
**Art Unit 1724**

I. Cintins  
June 27, 2004